

REMARKS

1. Summary of Office Action

In the Office Action mailed March 23, 2006, the Examiner rejected claims 1-4 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner evidently interprets the wording in the claims to suggest that the mobile station recited in the claims appears to establish a PPP session with itself. The Examiner also rejected claims 1, 2, 4, and 5-6 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,628,671 (Dynarski et al.), and the Examiner rejected claims 3 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Dynarski in view of U.S. Patent No. 6,466,574 (Fujisaki).

2. Response to Rejections under 35 U.S.C. § 112

As noted, the Examiner rejected claims 1-4 under 35 U.S.C. § 112, second paragraph for appearing to suggest that the mobile station (MS) recited in the claims establishes a PPP session with itself. Applicants have amended claims 1 and 4 (as well as 5) to make clear that the PPP sessions are established between the MS and a network entity that is communicatively coupled to the communication network. Claims 2-3 depend from claim 1, and therefore incorporate the amendments to claim 1. Applicants have made additional amendments to claims 1, 4 and 5 as discussed below.

3. Amendments to the Claims

In addition to the amendments to claims 1, 4 and 5 noted above, Applicants have amended these claims in order to make clear that the plurality of PPP sessions recited, in one way or another, in the claims are active PPP sessions. Further, Applicants have amended these claims to make clear that the recited classification of datagrams received

from the physical layer is based upon the association of each datagram with one of the active PPP sessions, and that following the classification, each datagram is transmitted to the active PPP session that corresponds to the association-based classification. Finally, these claims have been amended to make clear that each datagram is processed in its associated active PPP session.

Applicants have amended claim 2 in order to correct a minor typographical error.

Applicants have added a new claim, claim 18, which depends from claim 1, adding the limitation of identifying the network entity recited in claim 1 with a PDSN.

All of the amendments are supported in the specification and drawings.

4. Summary of Claimed Invention

The presently claimed invention provides a method for supporting multiple active PPP sessions between two entities in a soft handoff within a wireless communication environment. In such a situation, each active PPP session carries redundant datagrams between the peers. That is, the redundant datagrams are associated with and transmitted by multiple, concurrent PPP sessions. The invention provides for a method for utilizing multiple active PPP sessions to provide data integrity assurance by discarding packets containing errors, while retaining the datagrams that are error free.

As recited in independent claims 1, 4 and 5, at least two active PPP sessions are established for redundant transmission of datagrams. There are two management planes that effectively isolate the active PPP protocol entities. A first management plane located on an upper layer of the active PPP sessions, receives processed datagrams from the active PPP sessions, compares the processed datagrams with each other to determine the processed datagrams having errors, selects an error free one of the processed datagrams,

and transmits the selected processed datagram to the network layer. A second management plane located on a lower layer of the active PPP sessions receives the datagrams from the physical layer, classifies each received datagram according to the associated active PPP session, and then transmits each of the received, classified datagrams to the active PPP session corresponding to the datagram.

It should be understood that the preceding brief summary is intended to call attention to only certain aspects of Applicants' invention that are relevant to the following discussion. Consequently, the summary should not be viewed as encompassing all aspects previously disclosed and/or claimed, nor limiting the scope of Applicants' presently claimed invention in any new manner.

5. Response to Rejections under U.S.C. § 102(e)

As noted, the Examiner rejected claims 1, 2, 4, and 5-6 under 35 U.S.C. § 102(e) as being anticipated by Dynarski. Under M.P.E.P. § 2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Applicants respectfully submit that Dynarski does not teach all the elements of any of the amended claims.

Dynarski discloses an invention directed to a method and system for streamlining the establishment of new PPP sessions between a remote client device and a network access server when an existing PPP session becomes dormant. A new PPP session might be necessitated in a wireless network, for example, when a wireless client with an initial PPP session to a network access server moves out of range of one radio tower and into range of another. Dynarski discloses that this may cause the initial PPP session to enter a dormant state, and that a new PPP session (to the same or a different network access server), carried

via the new radio tower, is required if communications between the client device and the network are to be maintained. Instead of renegotiating a new PPP session, Dynarski discloses that the PPP state from the now-dormant PPP session is transferred to a new PPP session, thus bypassing certain initial steps of PPP session start-up and leading to more rapid establishment of an active PPP session to replace the dormant one. Dynarski does not teach multiple active PPP sessions between a remote client and a network access server, but rather a more efficient means for establishing new PPP sessions as they become needed to replace PPP sessions that become dormant.

In contrast to Dynarski, Applicants disclose and claim a method and apparatus for concurrently establishing multiple, active PPP sessions between a mobile station (MS) and a wireless network. Each of a plurality of active PPP sessions between the MS and the wireless network may support redundant transmission of datagrams. Applicants disclose and claim how datagrams received at a MS from the physical layer of a network connection may be classified according to which of the active PPP sessions they associated with, and then sent to their corresponding active PPP sessions for processing. After processing, datagrams are forwarded to a network layer following the discarding of ones found to contain errors. In Applicants' invention, PPP state is not transferred from a dormant to a new PPP session, because there are no dormant PPP sessions: all of the PPP sessions are active.

With regard to claims 1, 4 and 5, the Examiner cites column 8, lines 4-9 and Figure 1 in Dynarski as reading on claim elements that recite establishing at least two (claims 1 and 4) or a plurality of (claim 5) PPP sessions for redundant transmission of datagrams. Applicants respectfully submit that the amended claims require that the multiple PPP sessions between the MS and the network be **active**. Dynarski clearly teaches and claims transferring state

from a **dormant** PPP session to a new PPP session that replaces the dormant session, *not* establishing a two or more active PPP sessions for redundant transmission of datagrams.

For example, Dynarski discloses "...the present invention takes advantage of the fact that the PPP session state for the dormant session can be switched to the new session..." (column 7, lines 23-25). Although Dynarski describes a dormant PPP session as remaining "active" by virtue of its state being retained in the network (column 2, lines 29-30), it is clear that the intended utility of the retained PPP state is embodied in its being transferred to the new PPP session that then *replaces* the dormant one. Thus, Dynarski fails to teach either "establishing at least two active PPP sessions for redundant transmission of datagrams" as expressly recited in claims 1 and 4, or "a plurality of active PPP sessions for redundant transmission of datagrams" as expressly recited in claim 5.

The Examiner also cites column 7, lines 49-60 as reading on the elements of claims 1, 4, and 5 that recite "classifying the datagrams ... PPP session." In citing this text, the Examiner evidently equates, for example, the "table mapping IMSI/ESN numbers to PPP sessions" disclosed in Dynarski with the classifying of datagrams recited in Applicants' claims. Applicants respectfully submit that amended claims 1, 4, and 5 recite, in one way or another, "classifying the datagrams received from a physical layer **according to their association with one of the active PPP sessions and transmitting each datagram to the corresponding active PPP session.**" That is, the recited classification of each data results in associating each datagram with one of the active PPP sessions, and then transmitting each datagram to the corresponding PPP session.

Dynarski, on the other hand, discloses using the table mapping referred to in the cited text in order to identify the PPP state information associated with the dormant PPP

session, and then using the PPP state in the establishment of the new PPP session that replaces the dormant one. This is made clear in the paragraph that immediately follows the text cited by the Examiner (see column 7, lines 60-65). Thus in addition to the claim element discussed above, Dynarski also fails to teach "classifying the datagrams received from a physical layer according to their association with one of the active PPP sessions and transmitting each datagram to the corresponding active PPP session," as expressly recited in claims 1, 4, and 5.

The Examiner then cites column 15, lines 40 and following in Dynarski as reading on the elements of claims 1, 4, and 5 that recite, in one way or another, the processing of datagrams in their associated PPP sessions, followed by selection of datagrams for transmission to the network layer. Applicants respectfully point out that the text cited by the Examiner refers to low-level software that controls a hardware interface in the embodiment of a network access server disclosed in Dynarski. As such, PPP has no relevance to the various aspects of this low-level task. Further, nowhere does Dynarski disclose processing datagrams in plurality of PPP processes, then selecting datagrams for transmitting to a network layer, as recited in Applicants' claims. Hence, Dynarski also fails to teach the claim elements that recite, in one way or another, the processing of datagrams in their associated PPP sessions, followed by selection of datagrams for transmission to the network layer.

In view of the above discussion, Applicants respectfully submit that Dynarski fails to teach any of the elements of claims 1, 4, and 5 in their entirety. Therefore, for at least the reasons discussed, Applicants submit that claims 1, 4, and 5 are allowable.

Claims 2 and 3 depend from claim 1, and claims 6 and 7 depend from claim 5.

Applicants submit that for at least the reason that each of claims 2, 3 and 6-7 depend from an allowable claim, claims 2, 3 and 6-7 are allowable as well.

6. Response to Rejections under U.S.C. § 103

As noted, the Examiner rejected claims 3 and 7 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Dynarski and Fujisaki. In order to establish a *prima facie* case of obviousness of a claimed invention by applying a combination of references, the prior art must teach or suggest all of the claim limitations. M.P.E.P. § 2143. Applicants respectfully submit that no combination of Dynarski and Fujisaki teaches or suggests all the limitations of any of the amended claims.

Claim 3 depends from claim 1, and claim 7 depends from claim 5. The Examiner concedes that Dynarski fails to teach "selecting one of the datagrams," as recited in claims 1 and 5. However, for the reasons discussed above in connection with the Examiner's rejections under 35 U.S.C. § 102(e), Applicants submit that Dynarski is significantly more deficient in teaching or suggesting all the elements the independent claims 1 and 5 than acknowledged by the Examiner. Further, Fujisaki fails to make up for the substantial deficiencies in Dynarski. Thus the combination Dynarski and Fujisaki fails to teach or suggest all of the elements of claims 1 and 5, and by dependency, claims 3 and 7. Therefore, for at least the reason that they depend from allowable claims, claims 3 and 7 are allowable as well.

7. Conclusion

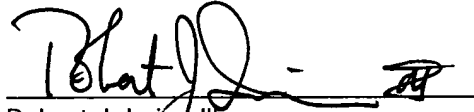
Applicants submit that claims 1-7 as well as new claim 18 are in good and proper form for allowance and respectfully request the Examiner to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney, at 312-913-3305.

Respectfully submitted,

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